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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,328	11/24/2003	Robin A. Reeder	PD-02W189	4312
7590 John E. Gunther Raytheon Company P.O. Box 902 (E1/E150) El Segundo, CA 90245-0902			EXAMINER NGUYEN, DUNG T	
			ART UNIT	PAPER NUMBER
			2828	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/05/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/720,328

Applicant(s)

REEDER ET AL.

Examiner

Dung (Michael) T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-24, 33-46 is/are allowed.
- 6) ☒ Claim(s) 1 and 25 is/are rejected.
- 7) ☒ Claim(s) 2-8 and 26-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments with respect to claims 1-8 and 25-32 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crow (3924201) in view of Tanuma (JP06037368).

With respect to claims 1 and 25, Crow shows in Fig.3 an apparatus comprising:

first means including a gain medium (12) for providing a beam of electromagnetic energy with a predetermined orientation with respect to a line of sight thereof, and

second means (porro prism 18) (col.4, l.15-68) for rotating said beam such that a transverse mode selection (beam reflected from porro prism 18) therefor relative to said gain medium is the same for two orthogonal directions thereof (it is well known in the art that the laser rod medium outputs a circular beam which has x and y axis (two orthogonal directions) and it doesn't matter what when the circular beam is rotated the two orthogonal directions are still the same).

However, Crow lacks a collimated beam.

Tanuma teaches a laser beam is collimated (Fig.1 and see the English constitution section).

Crow and Tanuma are under the same analogous art of laser technology.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Crow what is taught by Tanuma in order to be able to obtain a small size laser having a small beam divergence (meaning low loss) (see the English constitution section).

***Allowable Subject Matter***

Claims 2 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The above prior art fail to teach the limitation of said means includes a slab laser.

Claims 3-8 and 27-32 are also objected due to their dependency on claims 2 and 26.

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Claims 9 and 33 have been allowed over the Crow and Tanuma prior art because they fail to teach the limitations of an aperture stop and a beam rotator disposed between said anamorphic telescope and said second reflector operable to rotate the beam profile of said reshaped laser beam by 90 degrees after two passes.

Claims 10-23 and 34-46 have been found allowable due to their dependency on claims 9 and 33.

Claim 24 has been allowed over the Crow and Tanuma prior art because they fail to teach the limitations of a half-wave plate positioned between said slab and a second reflector and aligned to compensate the polarization rotation caused by said porro prism.

### **Communication Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 9:00 - 19:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

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Nguyen (Michael) Dung

2/17/07